UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,492	06/09/2005	Koji Matsumoto	0020-5382PUS1	7092

2292 7590 09/23/2010

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
SULTANA, NAHIDA	

ART UNIT	PAPER NUMBER
1791	

NOTIFICATION DATE	DELIVERY MODE
09/23/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/538,492	MATSUMOTO ET AL.	
	Examiner	Art Unit	
	NAHIDA SULTANA	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Final Rejection is in response to the amendment received on 07/14/2010, in response to the non-final action sent on 01/15/2010.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isozaki (US Patent 6, 337, 369 B1) in view of Albert et al. (US Patent 3, 254, 561) and in further view of Dempo (US patent 5, 512, 178).

For claims 1, 2, 3, Isozaki teach:

A method for producing a polarizing film comprising: the step of supplying polyvinyl film in/on which iodine is absorbed and oriented in an aqueous solution containing boric acid (col. 6. lines 38-50 and col. 4. lines 59-67).

However, Isozaki et al. is silent to dipping and treating said polyvinyl film in aqueous solution wherein of said aqueous solution at a wavelength of 450 nm is maintained in a range of 0.13 or less; wherein said aqueous solution containing boric acid is recycled while maintaining the absorbance of the aqueous solution at a wavelength of 450 nm in a range of 0.13 or less; wherein the absorbance of said

aqueous solution containing boric acid at a wavelength of 450 nm is maintained in a range of 0.13 or less by continuously or intermittently treating said aqueous solution with activated carbon.

In the same field of endeavor, process for polarizing ultraviolet light utilizing oriented, iodide stained film, Albert et al. teach having a polyvinyl alcohol film stretched and stained in processing in solution containing iodine, water and boric acid (col. 3. lines 1-10), and later uses iodide solubilizing agent in order to reduce iodine in the solution (col. 4. lines 5-15), and utilizes ultraviolet light through the film (col. 4. lines 5-10), and having specific transmittance and different wavelengths (col. 3. lines 15-23). These transmittance and wavelength (col. 3. lines 15-23) provides improvement in the final product produced.

Examiner would like to clarify that Albert further teaches that prior art prepare visible polarizer's stained with solution containing iodine on hydroxyl-substituted linear polymer and polarizer prepared in this manner have been found to be highly efficient to visible light (col. 1. lines 20-30). Furthermore, Albert contends that in order to increase efficiency, a polarizer having polyvinyl alcohol film prepared by stretching in iodine, and borating, it was noted that substantial improvement in the dichroism and transmittance were noted throughout the 260-400 millimicron region (col. 3. lines 1-20).

Because, in Albert, it is shown that improvements were shown in the dichorism and transmittances are noted throughout the 260-400 millimicron region (col. 3. lines 15-25), in preparing polarizer having film of polyvinyl alcohol (col. 3. lines 1-10), examiner note that it would have been obvious to modify method of producing polarizing

film as taught in Isozaki by adjusting the transmittance and wavelength which are related to improvement in the final product, as taught in Albert, for the benefit of having improved efficiency, since it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).*

Furthermore, one ordinary skill in the art knows that there are other ways of removing iodine from the boric acid solution, in order to obtain specific transmittance, such as by chemical or physical or electrochemical technique.

In the same field of endeavor, treating aqueous solution to remove any oxidizing agent, Dempo teaches that an activated carbon filter can be used to remove oxidizing substances from an aqueous solution (col. 3. lines 34-38). In this case the oxidizing component is the Iodine of Isozaki.

Because Isozaki et al. uses technique such as dipping stretched film containing iodide as shown above, it is inherent that iodide will also dissolve in the solution and produce color. Therefore, it would have been obvious to one ordinary skill in the art at the time of the applicant's invention to modify method of producing polarizing film as taught in Isozaki, with removing iodine which results in specific wavelength, as taught in Albert, and further using a carbon activated filter taught, in Dempo for the benefit of removing iodine.

Furthermore, since Albert shows providing ultraviolet light (at ultraviolet region) through the final product which is the film, it is noted that similar effect may be resulted by providing ultraviolet light through the film in the solution, since solution is applied on

the film as the last/final step. Because wavelength and transmittance of either the film, or the content of iodine in the solution of boric acid, are important factor for improvement in producing a polarizer film, as taught above by Albert, thus the combination and optimization using activated carbon Dempo, above produces a solution having desired wavelength and absorbance which are in the claimed ranges, and further resulting in specific contrast in the film.

As for claim 5, Isozaki further teach: wherein a temperature of aid said aqueous solution containing boric acid is from 55°C to 85°C (col. 6. lines 40-45), and a dipping time is from 90 seconds to 1,200 seconds (4 minutes as shown in col. 6. lines 45-46).

As for claim 6, Isozaki further teach: wherein said polyvinyl alcohol has a polymerization degree of 1,500 to 5,000 (“A film of PVA degree of polymerization 4000" col. 6. lines 35-40).

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isozaki (US Patent 6, 337, 369 B1) in view of Albert et al. (US Patent 3, 254, 561) in view of Dempo (US patent 5, 512, 178) and in further view of Tsuchimoto et al. (US publication 2003/0197939 A1) .

Regarding claim 4, Isozaki 369’ teach: having potassium iodide (about 20 g/L, col. 6. lines 40-42), boric acid (40 g/L, see col. 6. lines 40-41) in an aqueous solution. Furthermore, Isozaki et al. also mentions having water in the aqueous solution (col. 4.

lines 55-60), thus these ratios are of boric acid and potassium iodide are similar to the applicant's claimed invention. However the above references failed to teach the concentration of water.

In the same field of endeavor, polarizing film and process for producing it, polarizing plate and optical element, Tsuchimoto et al. teach similar range of concentration aqueous solution containing boron compound (at 0.1 to 15 weight percent, paragraph [0011]) having water (100% weight parts, paragraph [0011]) , and potassium iodide (0.5 to 50 weight parts of water, paragraph [0011])

It would have been obvious to one ordinary skill in the art at the time of applicant's invention to modify the composition of Isozaki 369' with specific water, potassium iodide, and boron compound, as taught in Tsuchimoto et al., for the benefit of having a desired concentration where polarizing film exhibits a high transmittance (see abstract).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isozaki (US Patent 6, 337, 369 B1) in view of Albert et al. (US Patent 3, 254, 561), in view of Dempo (US patent 5, 512, 178) and in further view of Isozaki et al. (US Publication 2004/0089960 A1).

As for claim 7, Isozaki 369' further teach that there is no limitation on number of each treatment (col. 3. lines 35-36), and having multiple stretching steps (col. 4. lines 25-30). However, the steps taught in Isozaki are one way of forming the film, and there

are other ways of forming it., and there are other ways stretching and dipping can be done.

However, the specific dipping and stretching steps as claimed is not shown in Isozaki, However, one ordinary skill in the art would know to modify them.

In the same field of endeavor, process for producing polarizing film, Isozaki 960' teach: wherein said polyvinyl alcohol film in/on which iodine is adsorbed (paragraph [0056]), and oriented is a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in water ("dipper in water" paragraph [0056]) and then dipping it in a solution containing iodine and potassium iodide ("iodide and potassium iodide" paragraph [0056]), a film produced by dipping an unstretched polyvinyl alcohol film in a solution containing iodine and potassium iodide ("iodide and potassium iodide" paragraph [0056]) and then uniaxially stretching it a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in a solution containing iodine and potassium iodide (paragraph [0056]), a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in a plurality of dipping steps (paragraph [0056]), or a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in a dry state and then dipping it in a solution containing iodine and potassium iodide (paragraph [0056]).

It would have been obvious to one ordinary skill in the art at the time of the applicant's invention to modify method of producing polarizing film as taught in Isozaki 369' with having multiple varying stretching and dipping step, taught in Isozaki 960' for

the benefit of absorbing material and having extremely good polarizing properties (paragraph [0057]).

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, and 8-10 of copending Application No. 10/538079. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claim contains similar subject matter described differently.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

For claims 1-7, Application 079' teaches:

a method for producing a polarizing film comprising the step of supplying a polyvinyl alcohol film in/on which iodine is adsorbed and oriented in an aqueous solution containing boric acid and dipping and treating said polyvinyl alcohol film with said aqueous solution, (cl 1);

wherein polyvinyl alcohol film is dipped in said aqueous solution containing boric acid while said aqueous solution is treated with activated carbon continuously or intermittently (cl. 6);

wherein a weight ratio of water: boric acid: potassium iodide in said aqueous solution containing boric acid is usually 100:(2-15):(2-20) (cl. 1);

wherein said polyvinyl alcohol has a polymerization degree of 1,500 to 5,000 (cl. 9);

wherein a temperature of aid said aqueous solution containing boric acid is from 55°C to 85°C, and a dipping time is from 90 seconds to 1,200 seconds (cl. 8);

wherein said polyvinyl alcohol film in/on which iodine is adsorbed and oriented is a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in water and then dipping it in a solution containing iodine and potassium iodide, a film produced by dipping an unstretched polyvinyl alcohol film in a solution containing iodine and potassium iodide and then uniaxially stretching it, a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in a solution containing iodine and potassium iodide, a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in a plurality of dipping steps, or a film produced by uniaxially stretching an

unstretched polyvinyl alcohol film in a dry state and then dipping it in a solution containing iodine and potassium iodide (cl. 10).

Furthermore, since the boric acid is treated with activated carbon continuously and intermittently as shown above, it is inherent the wavelength is maintained at 450 nm, and 0.13 absorbance.

Response to Arguments

7. Applicant's arguments filed 07/14/2010 have been fully considered but they are not persuasive.

8. Applicant mainly argued independent claim 1, combination provided by Isozaki and Albert et al, do not describe or suggest any absorbance of the aqueous solution at a wavelength of 450 nm.

Examiner disagrees. The primary reference Isozaki teaches a method for producing a polarizing film comprising: the step of supplying polyvinyl film in/on which iodine is absorbed and oriented in an aqueous solution containing boric acid (col. 6. lines 38-50 and col. 4. lines 59-67). Similarly, for producing polarizing film for polarizer, similar steps are taken in Albert. For example stretching a film of polyvinyl alcohol film in solution containing iodine (col. 3. lines 1-5), and removing iodine by boric acid solution (col. 3. lines 5-20). These are well known process of producing polarizing film of polyvinyl alcohol.

Furthermore, because, in Albert, it is shown that improvements were shown in the dichorism and transmittances, which are noted throughout the 260-400 millimicron region (col. 3. lines 15-25), in preparing polarizer having film of polyvinyl alcohol (col. 3.

lines 1-10), examiner note that it would have been obvious to modify method of producing polarizing film as taught in Isozaki by adjusting the to specific transmittance, wavelength, as taught in Albert, for the benefit of having improved efficiency at specific wavelength region, since it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).*

9. Applicant also argued that Albert et al. does not describe to "utilize ultraviolet light through the film in the solution".

Examiner's would like to point out that applicant argues material which were not properly claimed. For example, claim 1, do not disclose utilizing either UV or visible light through the film in the solution. For the purpose of examination, aqueous solution is at wavelength of 450 nm is maintained in the range of 0.13 or less.

It is explicitly disclosed in Albert that it is necessary to have specific/certain amount of iodine on the film, and therefore, using iodine reducing agent by dipping in boric acid solution (see col. 2. lines 20-70). Furthermore, one ordinary skill in the art knows that there are other ways of removing iodine from the boric acid solution, in order to obtain specific transmittance, such as by chemical or physical or electrochemical technique.

For an example, in the same field of endeavor, treating aqueous solution to remove any oxidizing agent, Dempo teaches that an activated carbon filter can be used to remove oxidizing substances from an aqueous solution (col. 3. lines 34-38). In this case the oxidizing component is the Iodine of Isozaki.

Because Isozaki et al. uses technique such as dipping stretched film containing iodide as shown above, it is inherent that iodide will also dissolve in the solution and produce color. Therefore, it would have been obvious to one ordinary skill in the art at the time of the applicant's invention to modify method of producing polarizing film as taught in Isozaki, with removing iodine which results in specific wavelength, as taught in Albert, and further using a carbon activated filter taught, in Dempo for the benefit of removing iodine. The combination and optimization above provided, produces a solution with specific wavelength and absorbance in the claimed ranges, and further resulting in specific contrast in the film. Furthermore, since Albert shows providing ultraviolet light through the final product which is the film, it is noted that similar effect may be resulted by providing ultraviolet light through the film in the solution, since solution is applied on the film as the last/final step.

For example, examiner would like to cite a reference (US Publication 2009/0237786 A1), which discloses that "it has been found that polarizing plate obtained by using a film in which the refractive index n(lamda) at a wavelength lamda in the range 380 to 780 nm of the first thermoplastic resin layer located at the position closest to the polarizer and the refractive index nb (lamda) at a wavelength lamda in the range of 380 to 780 of polyvinyl alcohol contained in the polarizer satisfy a specific relationship has a high contrast and no defective visibility by cords and is excellent in flexibility and scratch resistance" (see paragraph [0013], also see paragraphs [0133]).

Also examiner would like to cite US Publication 2009/0128745 A1 which discloses that "a little colored polarizing plate, that is so called 'neutral gray' polarizing

plate having almost fixed absorbance at almost the entire wavelength range of visible light can be obtained by using aqueous solution of boric acid containing potassium iodide."

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

11. US Patents 2, 699, 994; 3, 113, 864; 3, 247, 127.

12. US Publication 2010/0226008 A1; 2010/0045910 A1; 2009/0237786 (paragraphs [0133, 0106]); 2009/0128745 A1 (see paragraph [0051]); 2009/0126127 A1 (paragraph [0054])

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

14. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAHIDA SULTANA whose telephone number is

(571)270-1925. The examiner can normally be reached on Mon- Fri 9:30 Am - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on 571-272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NS

/Maria Veronica D Ewald/
Primary Examiner, Art Unit 1791